Driving Value: KPIs, ROI, and Continuous Transformation

Kurt Black, Tulip

Sean Joseph, Tulip

OPERATIONS CALLING powered by aws | TULIP

FEATURING

Kurt Black

Sr Adoption Manager, Tulip

Sean Joseph

Presales Eng, Tulip

AGENDA

01 Introductions

02 Aligning Your Metrics

03 The Value Cascade Model for ROI

04 A Framework for Continuous Improvement

OPERATIONS CALLING powered by aws | TULIP

An estimated 70% of all digital transformation initiatives fail to reach their stated goals.

- McKinsey & Company

Only 25% of companies have mapped their digital initiatives back to financial KPIs and value.

- Everest Group

Why is it so hard to get to long-term value?

- Lack of organizational alignment
- No repeatable process to drive continuous improvement
- Projects too long to get to value
- Lack of metrics to properly evaluate success
- One off projects
- Lack of Prioritization

Today we'll discuss an approach to drive **long-term value** with your ~~digital~~ continuous transformation initiatives:

OPERATIONS CALLING powered by aws | TULIP

STAGE 1: ALIGN

Strategic Misalignment

Alignment in a nutshell:
Can you answer the following questions?

1. What are the pains your organization faces today?
2. What is the cost impact of these pains?
3. Where should you start?
4. What potential business impact would this pilot have?

Alignment in a nutshell:
Can you answer the following questions?

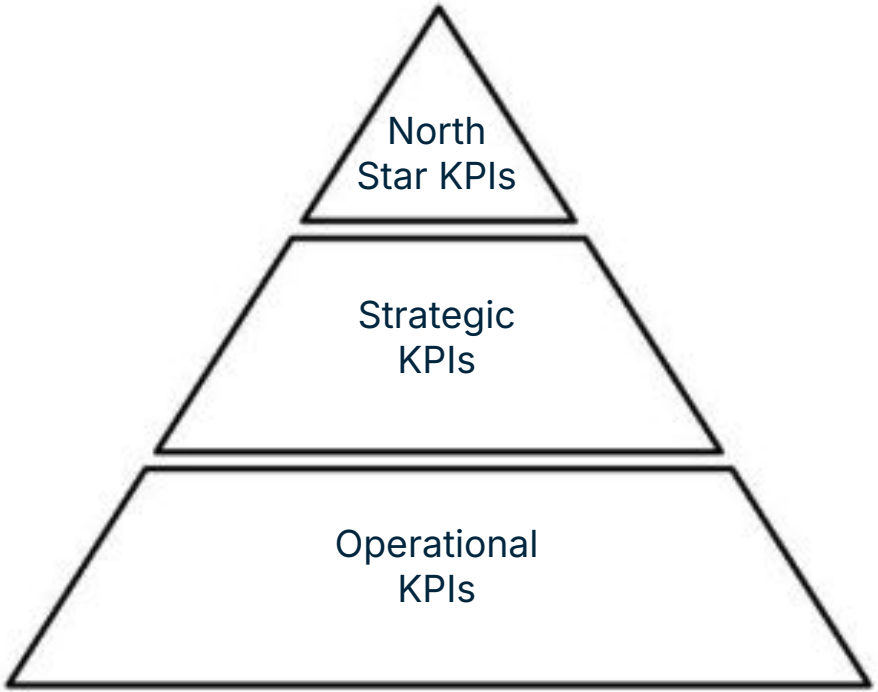
1. What are the pains your organization faces today?
2. What is the cost impact of these pains?
3. Where should you start?
4. What potential business impact would this pilot have?

How does alignment help us get ROI?

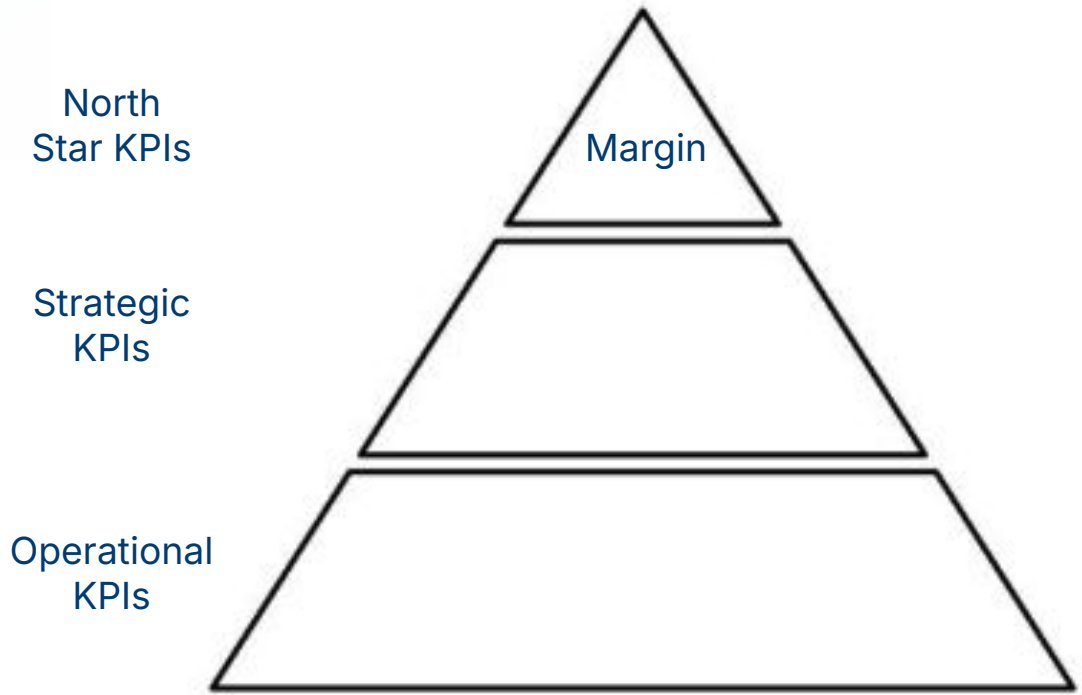
*"We thought our problem was **machine downtime**. But when we used Tulip to track micro-stops and operator actions in real-time, we realized **the real issue was material flow to the line**. We were trying to solve the wrong problem. Tulip gave us the real-time visibility to **find our true north star."***

The Value Cascade Model

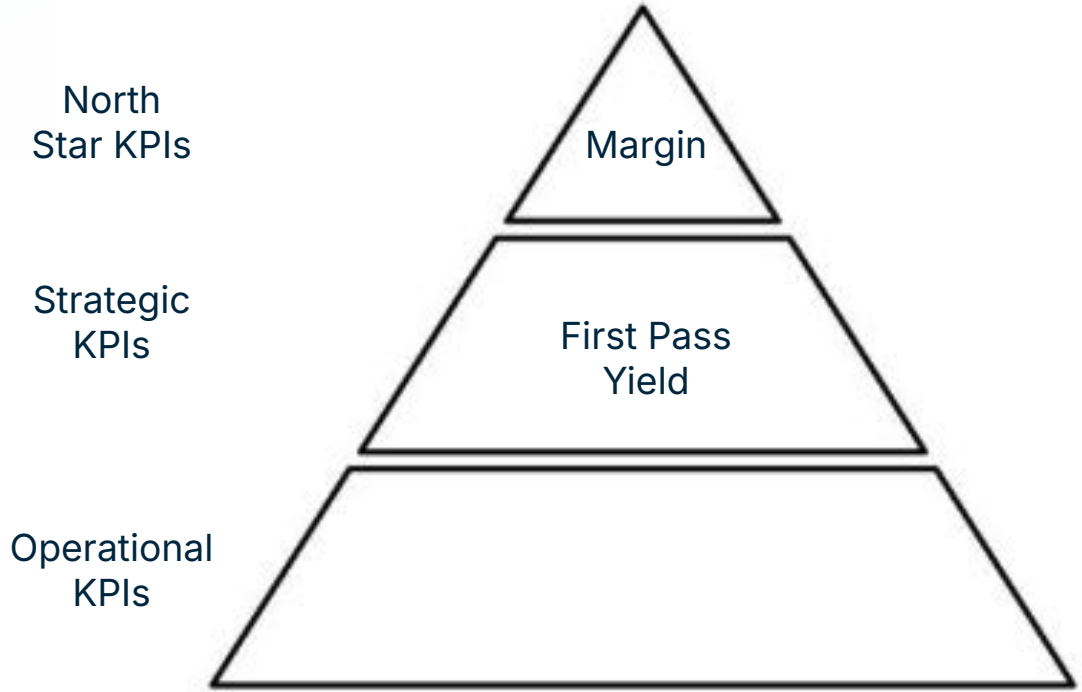
Key is to align initiatives from top down to front line



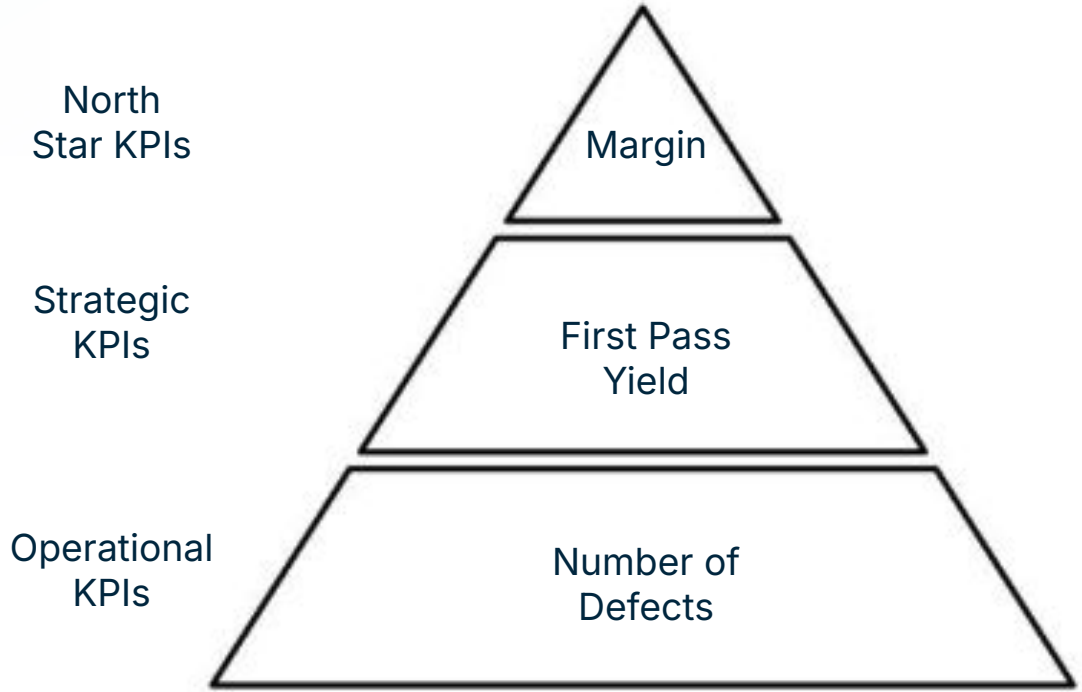
The Value Cascade Model



The Value Cascade Model



The Value Cascade Model



OPERATIONS CALLING powered by aws | TULIP

STAGE 2: LAUNCH

The Mistake Companies Make

Long-term Success Requires A Different Approach

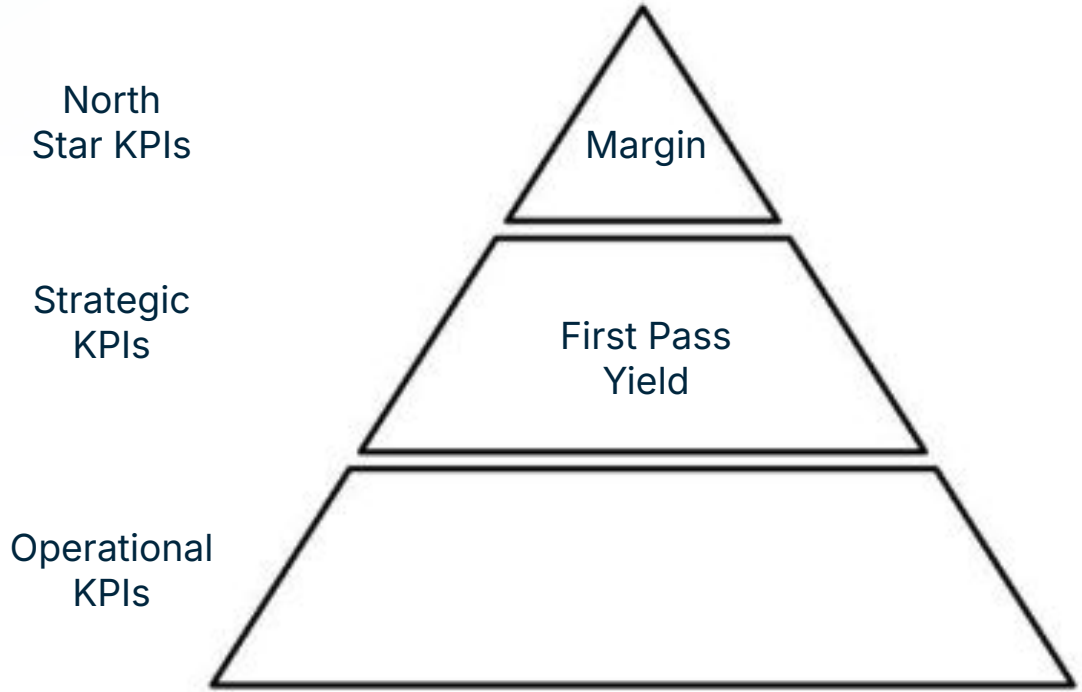
The Old Way

- Big projects
- Long-time to value
- One-at-a-time

The New Way

- Smaller projects
- Quick wins
- Continuous improvement
- Multiple projects (smaller ones add up)
- Fast time to value / ROI

The Value Cascade Model



In Launch Phase, We’re Getting A Before & After Picture

Launch Identifies:

*"We thought **our problem was machine downtime**. But when we used Tulip to track micro-stops and operator actions in real-time, we realized **the real issue was material flow to the line**. We were trying to solve the wrong problem. **Tulip gave us the real-time visibility to find our true north star.**"*

Customer Insight: The Power of A Quick Win

*"We didn't try to digitize our entire facility. We started with **a single digital logbook app for line clearance**. It took one engineer two weeks to build. It eliminated **95% of our documentation errors** on that line and saved us from a potential audit finding. That single win gave us the **credibility we needed** to do more."*

GROUP DISCUSSION: What Is Your Quick Win?

Identify and share one idea for a simple, high-impact app you could build to address the problem you identified in our first exercise.

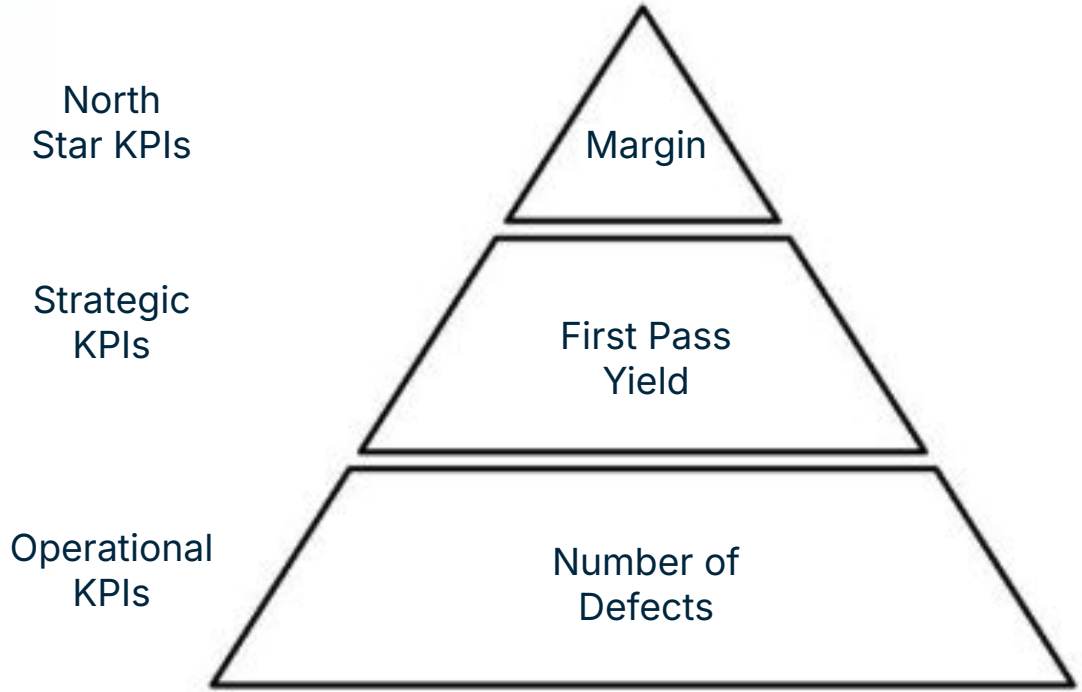
How would you evaluate and prioritize these projects?

OPERATIONS CALLING powered by aws | TULIP

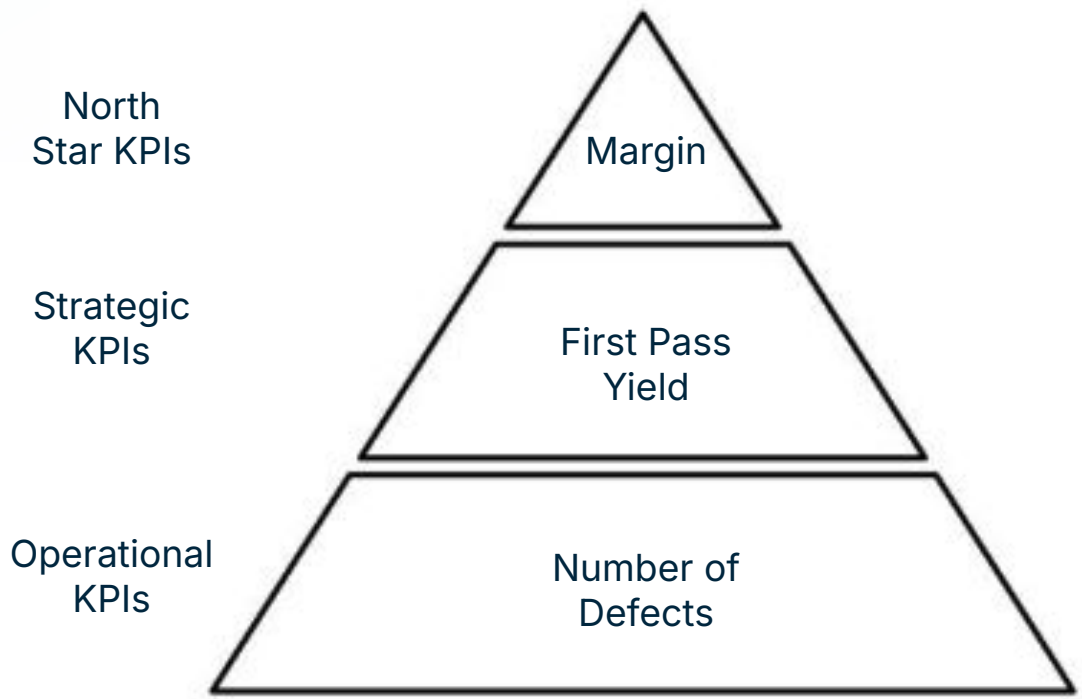
STAGE 3: PROVE

The Prove Phase Is About Dialing In

The Value Cascade Model



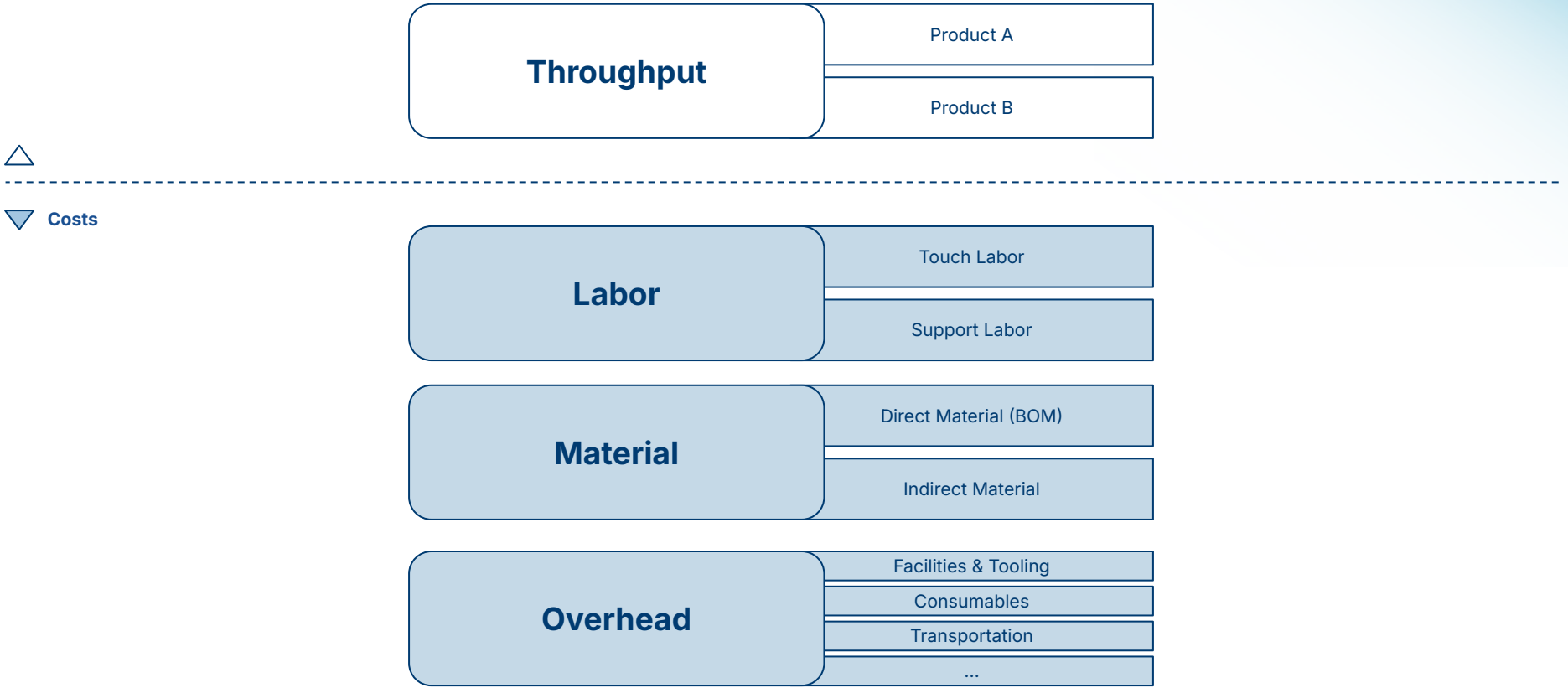
The Value Cascade Model



Now we can go bottom-up to provide better ROI numbers

Why Proving ROI Matters

- Gives the team (and tool) credibility
- Fills in the after picture more comprehensively and precisely
- Provides evidence for funding additional projects
- Aligns teams on a common ROI-driven roadmap, prioritizing highest impact projects
  - Further drill-down / improvement
  - New use cases
  - Enhancements & integrations



Level 1	Level 2	Level 3
Revenue	**Throughput**	[Products / families]
Cost	**Labor**	Touch Labor	Function 1 (e.g. assembly)
			...
			Function *n* (e.g. machining)
		Support Labor	Supervision
			Manufacturing Engineers
			Industrial Engineers
			Quality / Inspection
			Manufacturing Planners
			MRB Engineers
			Procurement / Buyers
			Warehouse & Material Control
			Production Management
			Factory IT / OT
	Material	Indirect Material	Bulk / Floor Stock (consumed)
		Direct Material	Scrap
			Direct Material (consumed)
	Overhead	Facilities & Tooling	Rent / Lease / Mortgage
			Facility Maintenance & Repairs
			Utilities
			Non-capitalized tooling
			Consumables
			Tool Maintenance & Repairs
		Transportation	Planned Freight
			Expedited Freight
			Factory Vehicle Expenses
		Taxes & Insurance	Property Taxes
			Building Insurance
			Misc. Taxes & Insurance
		Depreciation	Tooling Depreciation
			Facility Depreciation

Step 1: Map each problem statement or use case to relevant items in the framework

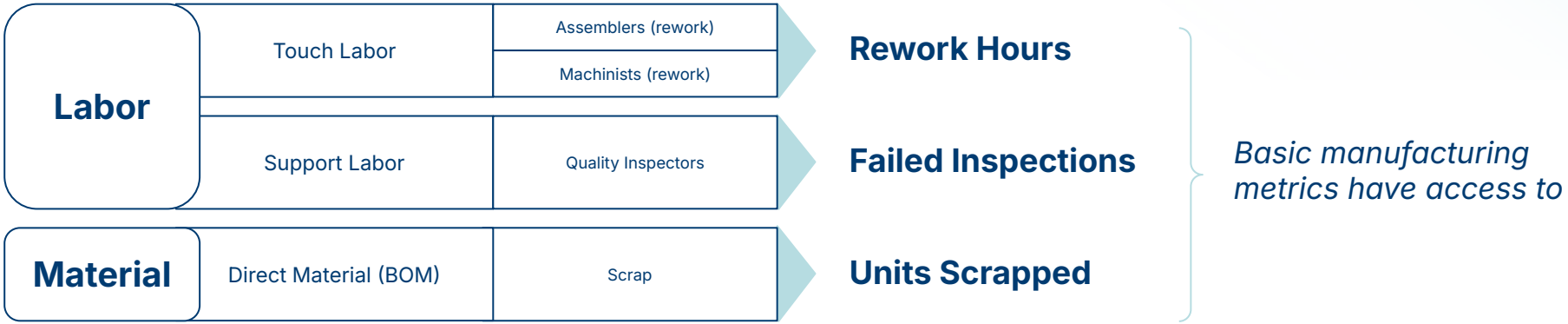
We want Tulip to help us increase **First Pass Yield**

*Where will there be financial benefits from increasing **First Pass Yield**?*

Labor	Touch Labor	Assemblers (rework)
		Machinists (rework)
	Support Labor	Quality Inspectors
Material	Direct Material (BOM)	Scrap

Example, not exhaustive

Step 2: Identify accessible ‘drivers’ for each item – what mfg. KPI correlates with that cost?



Examples, not exhaustive

Step 3: Find a conversion rate for each driver – how much does one [driver] cost?

Rework Hours	1 partially burdened labor hour = **$75**
Failed Inspections	Paperwork for failed inspection takes 3 hours @ $100/hr = **$300**
Units Scrapped	Average material cost of a unit scrapped = **$2,300**

Step 4: Crunch the numbers

For each item in Step 1…

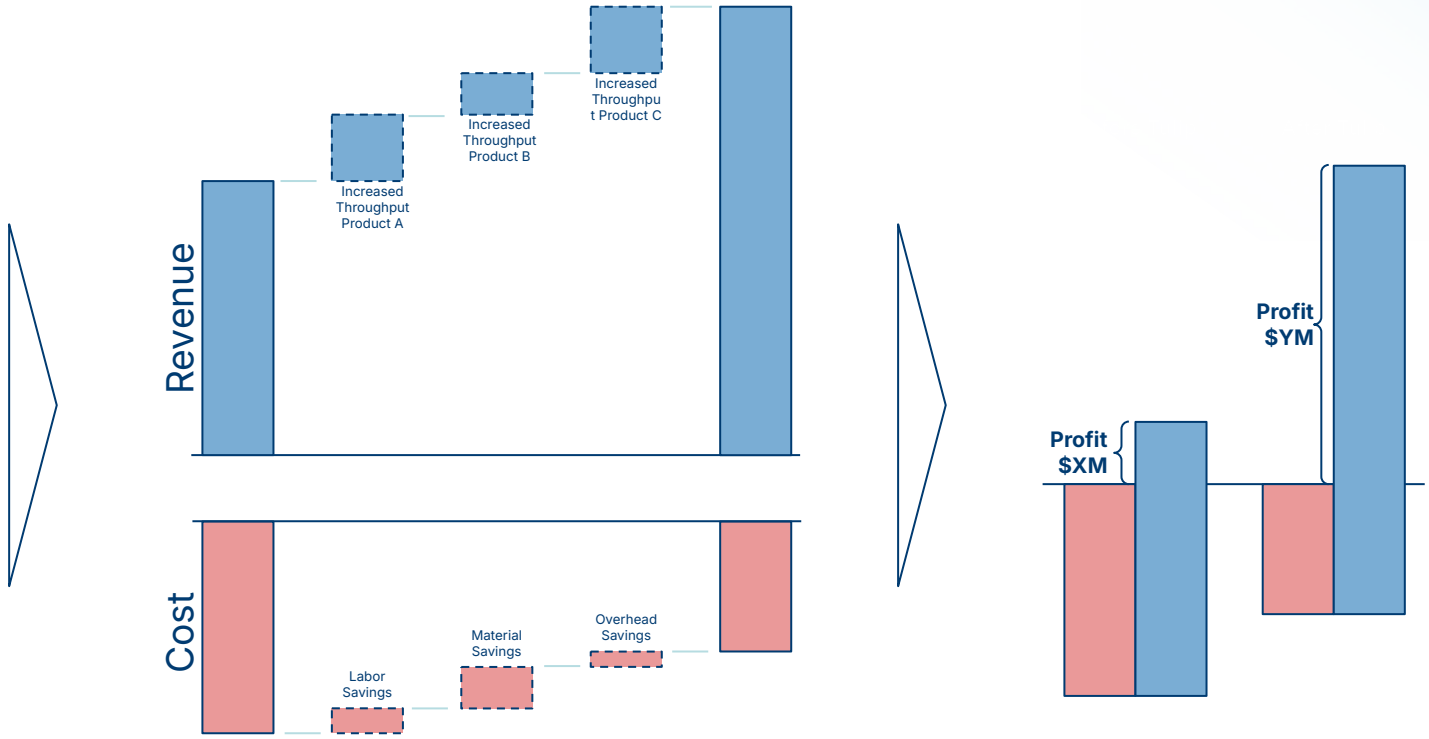
From Step 2

From Step 3

Negative number for costs = cost savings

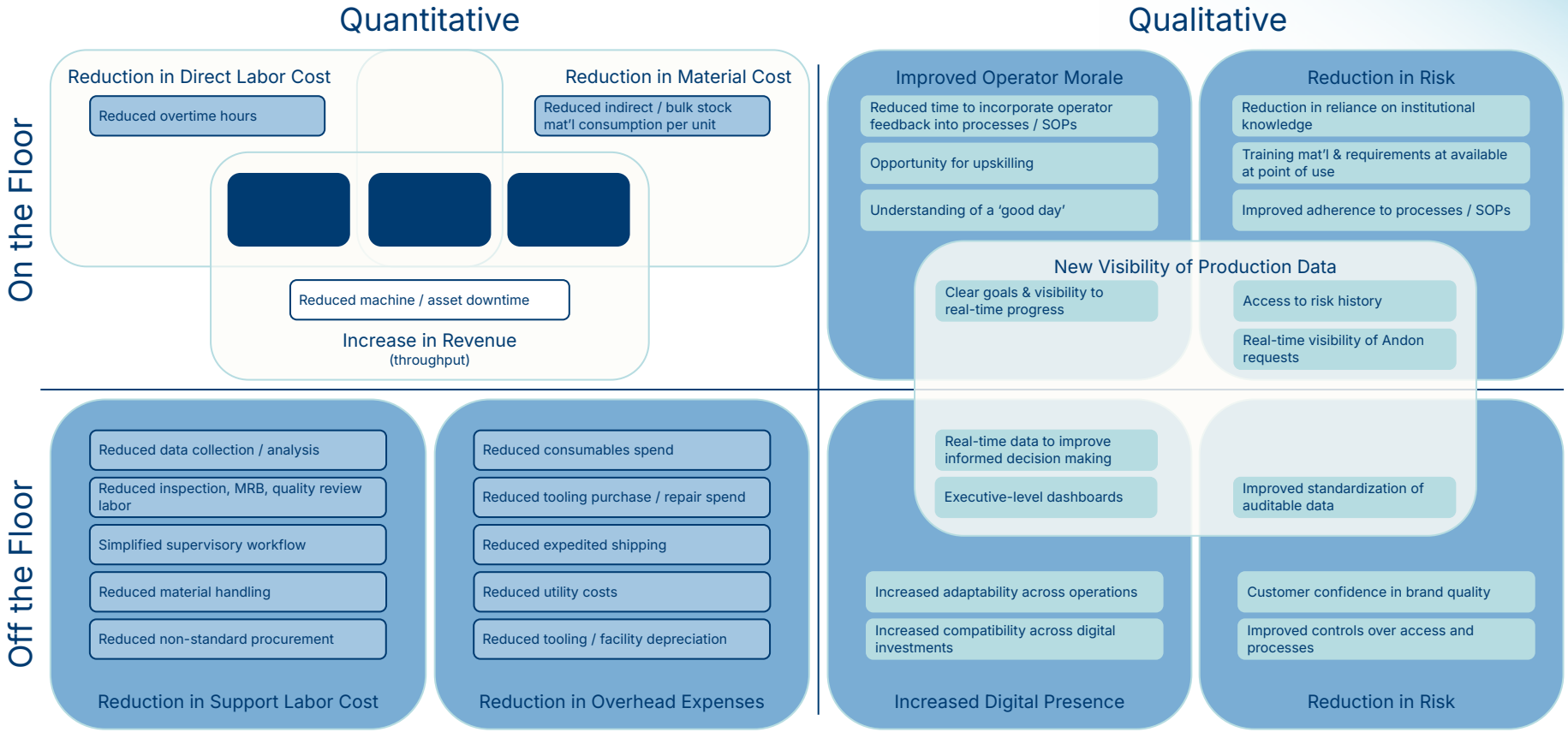
Positive number for revenue = increase in revenue

The analysis yields a clear before and after description of your factory financials

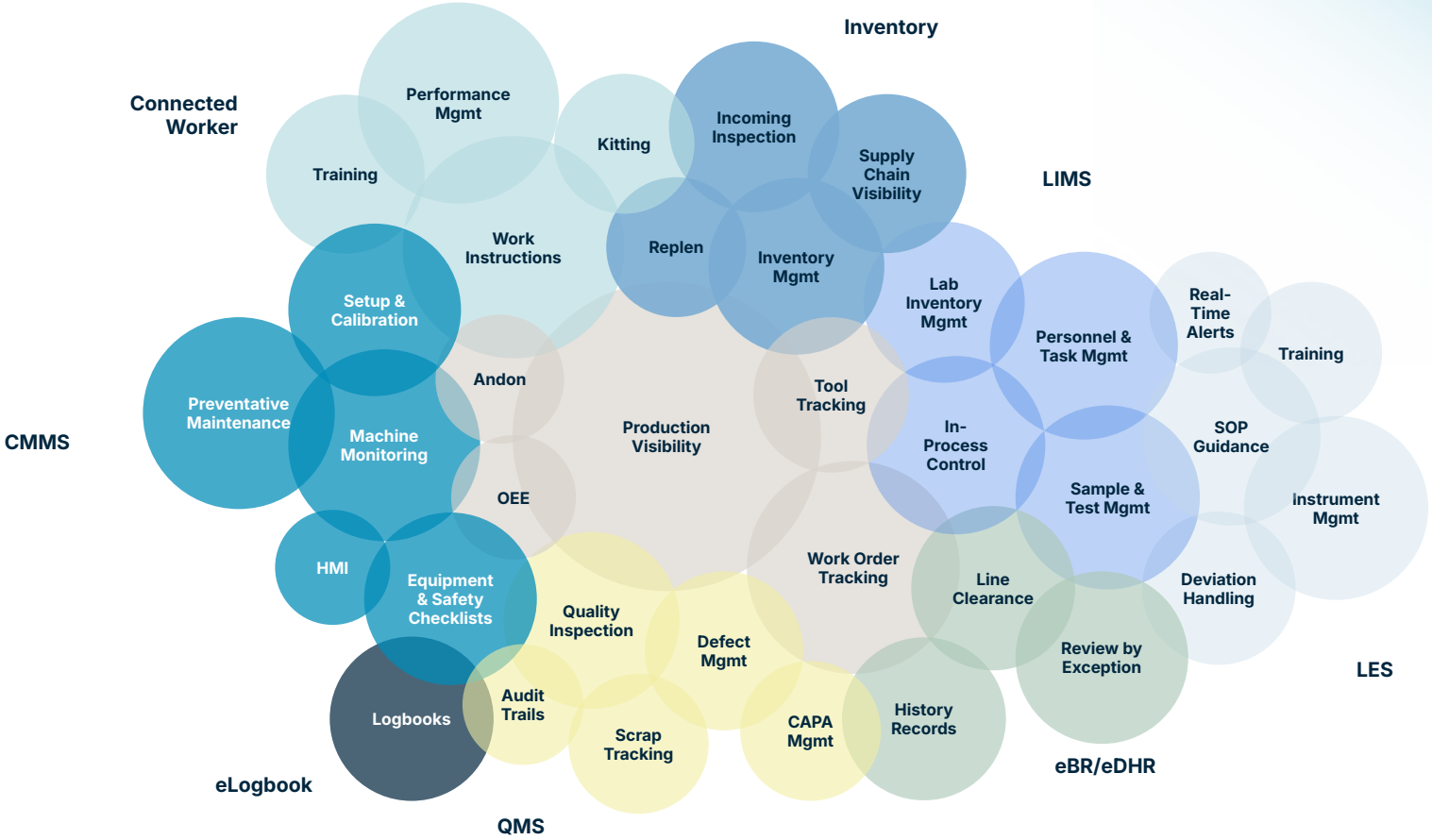


Area	KPIs	Examples of Impact
Production Capacity and Uptime	Prod. capacity	**40-45%** increased production (TEI)
	Throughput	**20%** improvement in throughput Skydio
	Turnaround Time	**20-25%** shorter lead times Formlabs
Admin Productivity	Admin labor	**>100 hrs** saved daily in admin tasks related to traceability Jewelry Mfg
		80% global reduction in administrative work Industrial mfg
		50% time savings for supporting staff gathering and reviewing data TEI
Operator Productivity	Ramp Up Time	**6-month** reduction in training time on an assembly line TEI
	Picking Time	**25%** less time picking parts Electrical Equipment Mfg
	Cycle Times	**20%** reduction in cycle time Formlabs
	Data Entry Savings	**5-7 hrs** saved /day /cell replacing paper Contract Mfg
	Material Handler TIme	**40% boost** in productivity for material handlers Fixtures mfg
	Inspection Time	**50%** reduction in time spent on inspection and rework TICO
Quality Improvements	First Pass Yield, Defect rate	**85%** reduction in quality escapes VEKA
		70% yield, up from single digits OPEX
		70% reduction in defects in finished goods TEI
	Scrap rate	**20%** reduction in scrap rate Zaleco
		74% reduction in material scrap Protolabs
	Data errors	**Eliminated data errors** from manual entry Metal
Traceability	Warranty	**Photo proof** issues didn't originate from line Boat Mf
	Material escape	**$350,000** precious material loss savings at one site Jewelry Mfg

In addition to quantitative value, there are qualitative benefits to digital transformations



Not mutually exclusive or completely exhaustive; increased revenue assumes demand exceeds supply



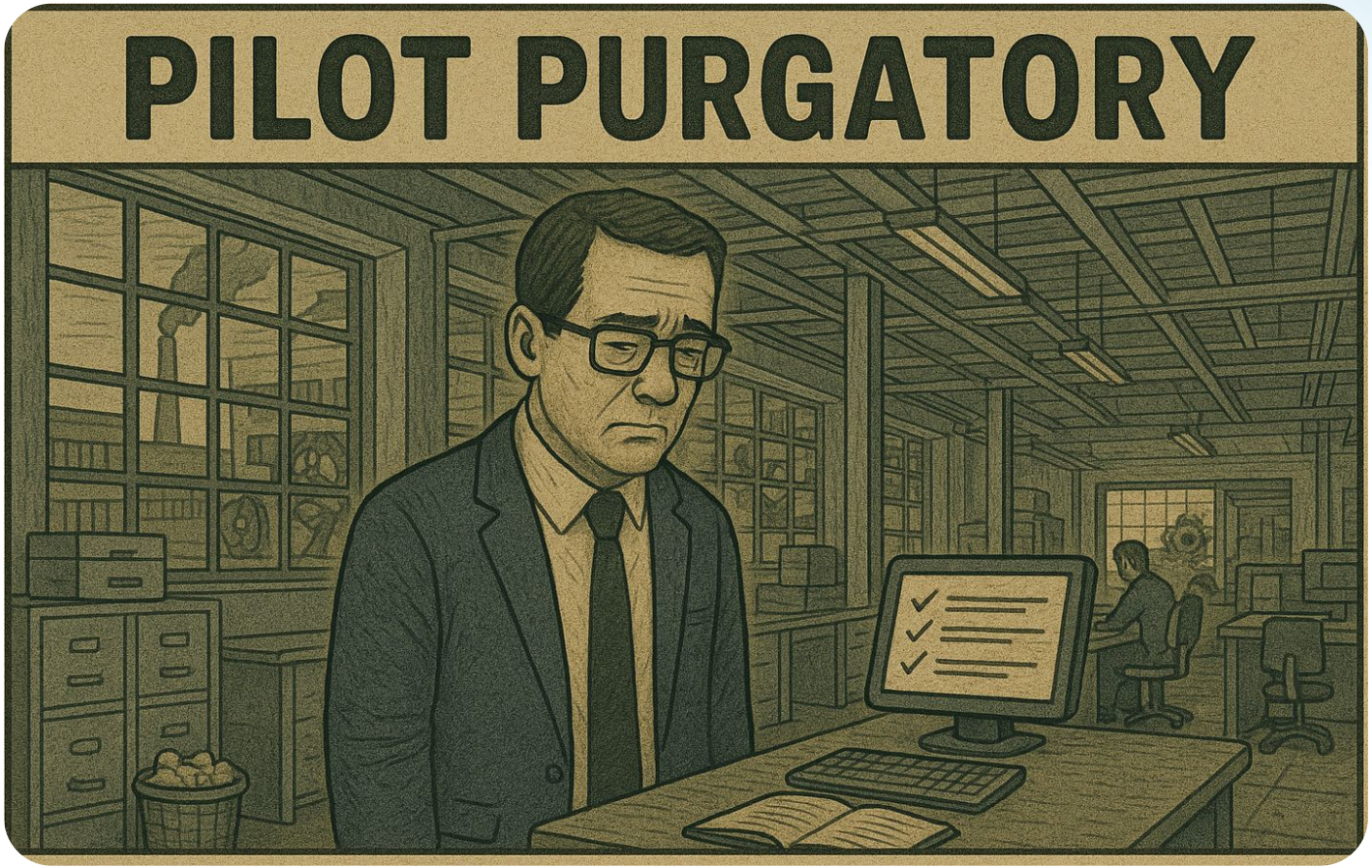
EXERCISE 2: Bottom-Up ROI

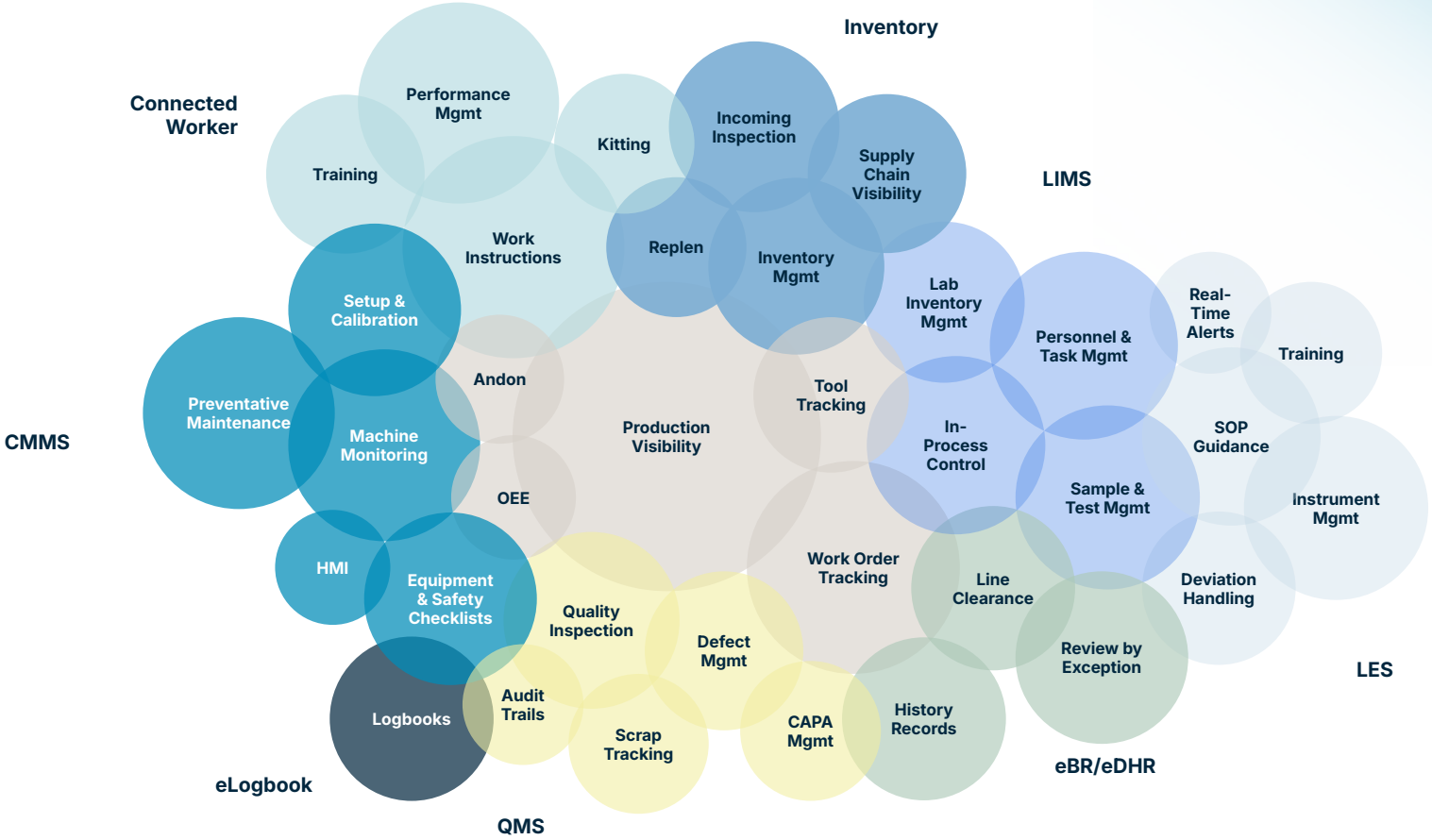
Using your worksheet, let's start to identify the metrics you have available for your key driver(s) and metrics that could be collected with future apps

	Level 1	Level 2	Level 3	HAVE	NEED
Revenue	**Throughput**		[Products / families]		
Cost	**Labor**	Touch Labor	Function 1 (e.g. assembly)		
			...		
			Function *n* (e.g. machining)		
		Support Labor	Supervision		
			Manufacturing Engineers		
			Industrial Engineers		
			Quality / Inspection		
			Manufacturing Planners		
			MRB Engineers		
			Procurement / Buyers		
			Warehouse & Material Control		
			Production Management		
			Factory IT / OT		
	Material	Indirect Material	Bulk / Floor Stock (consumed)		
			Scrap		
		Direct Material			
			Direct Material (consumed)		
	Overhead	Facilities & Tooling	Rent / Lease / Mortgage		
			Facility Maintenance & Repairs		
			Utilities		
			Non-capitalized tooling		
			Consumables		
			Tool Maintenance & Repairs		
		Transportation	Planned Freight		
			Expedited Freight		
			Factory Vehicle Expenses		
		Taxes & Insurance	Property Taxes		
			Building Insurance		
			Misc. Taxes & Insurance		
		Depreciation	Tooling Depreciation		
			Facility Depreciation		
	SG&A				
	R&D				

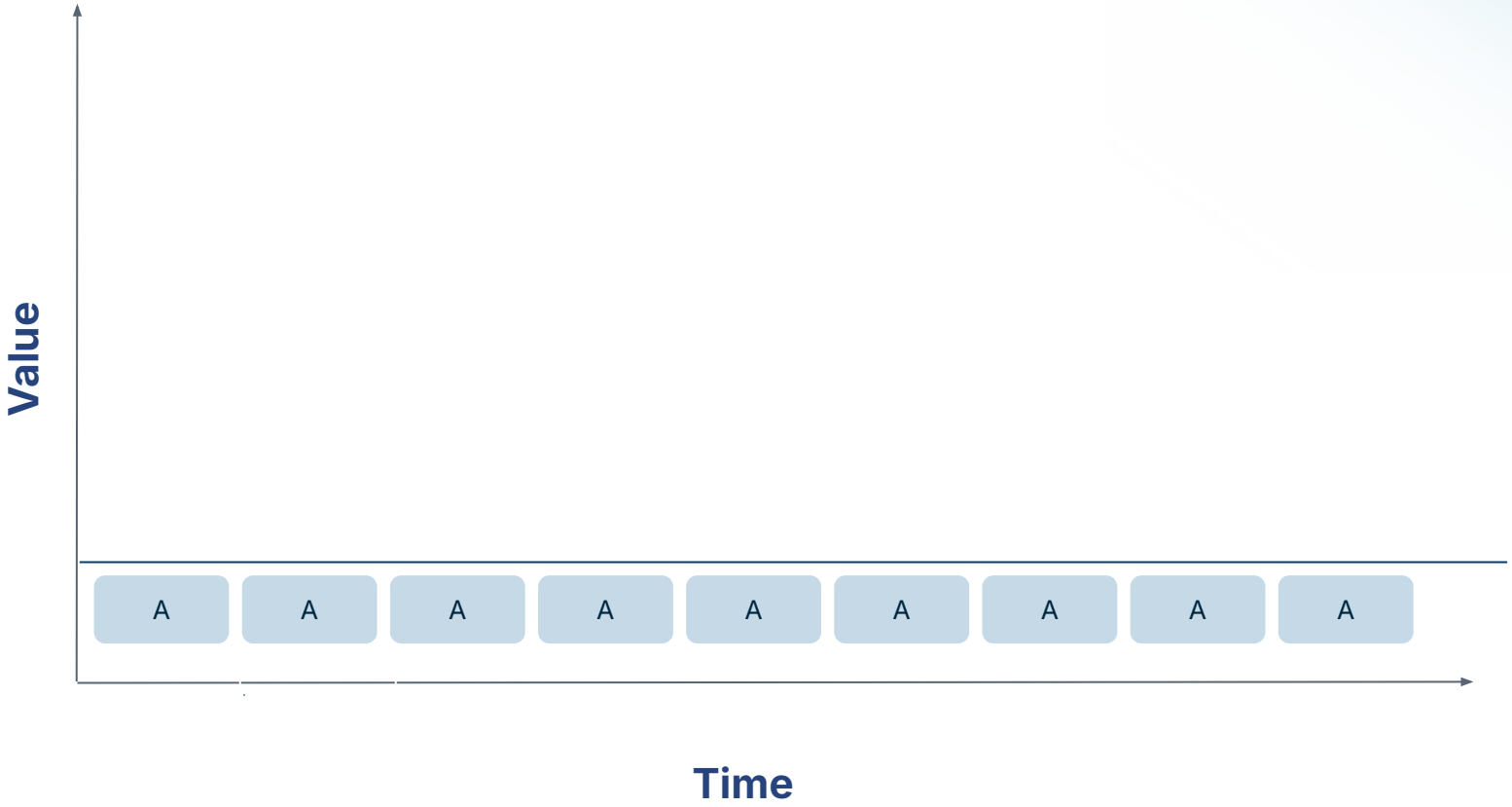
OPERATIONS CALLING powered by aws | TULIP

STAGE 4: SCALE

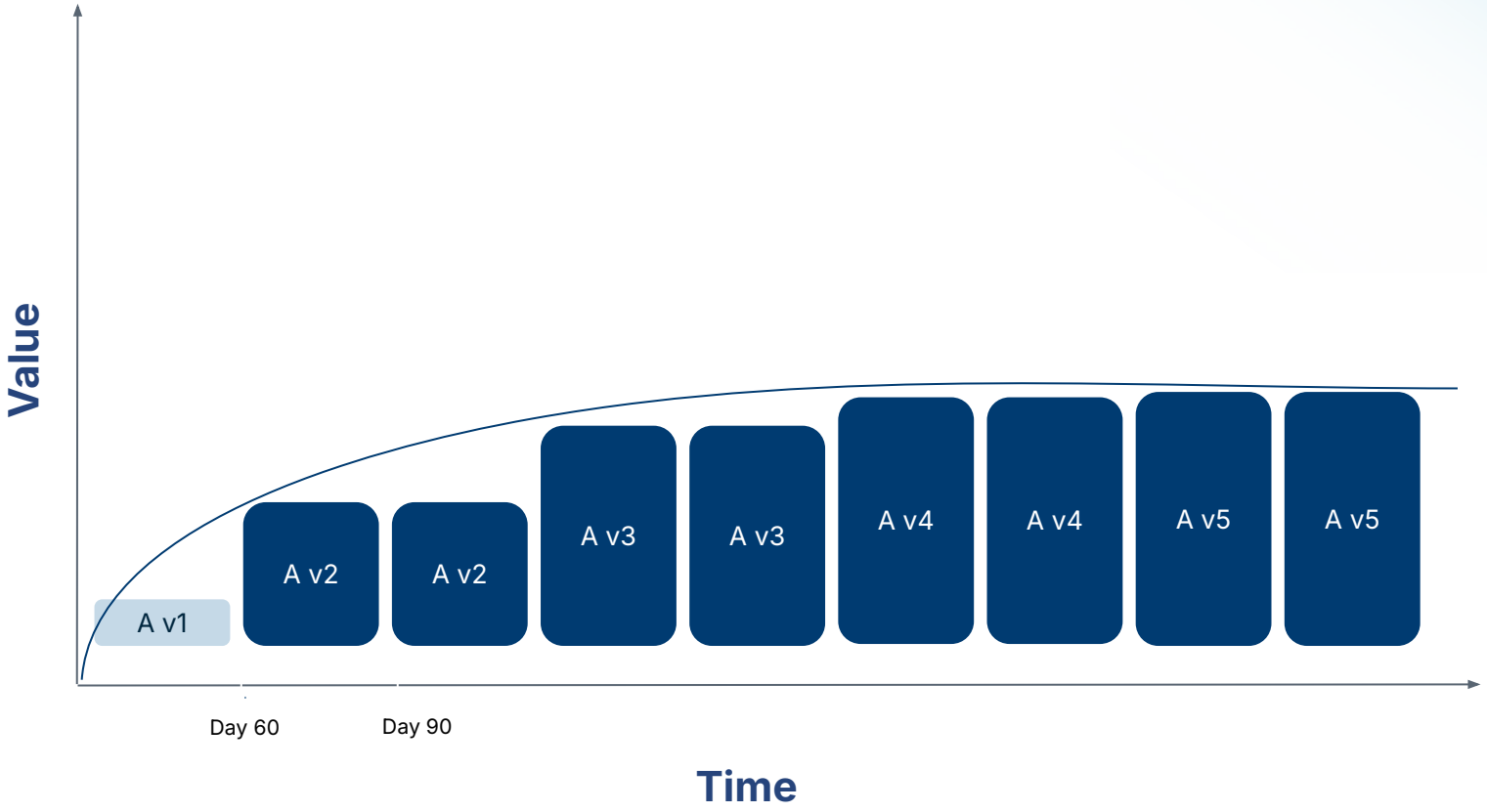




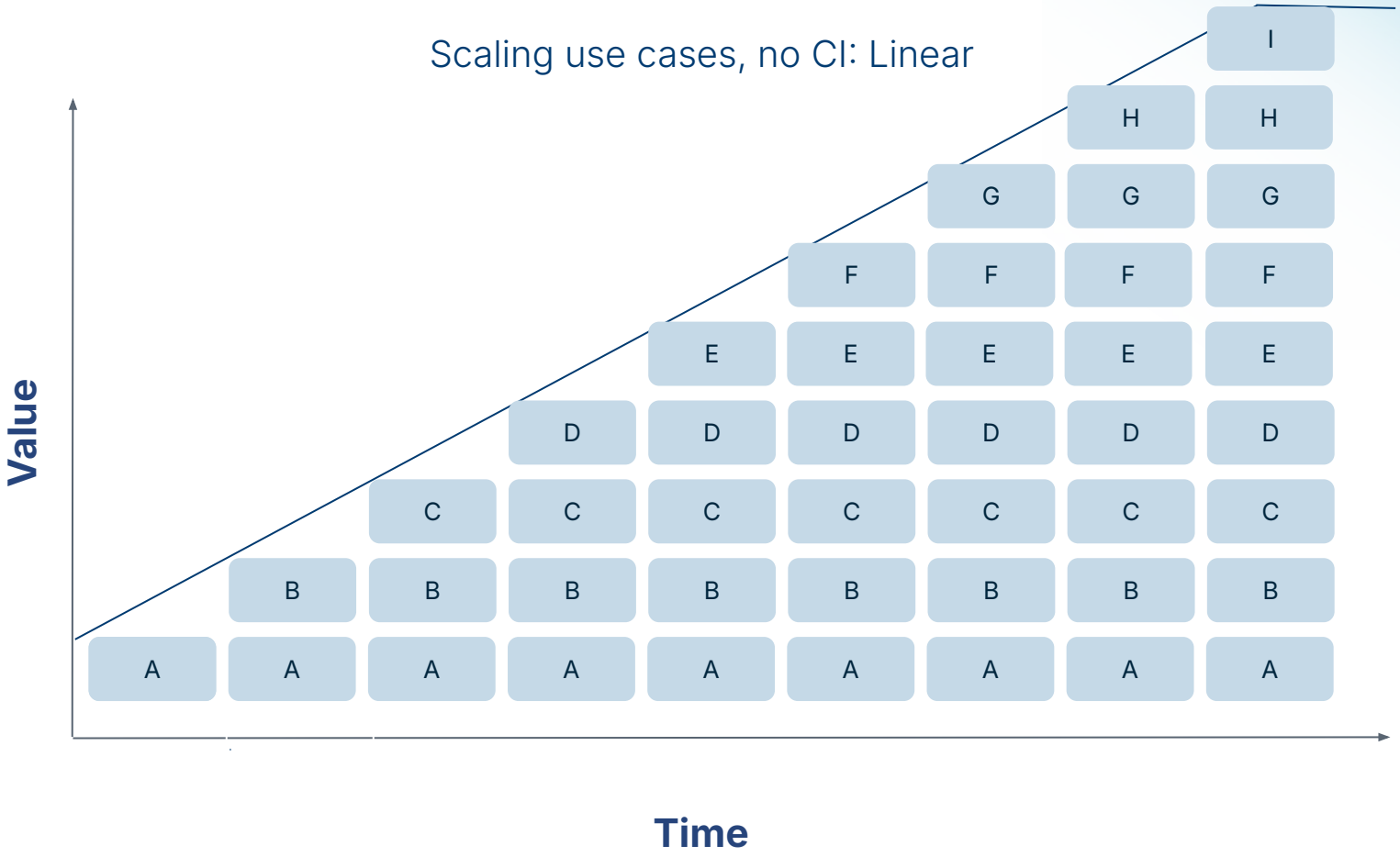
No CI, no scaling: Flat Value



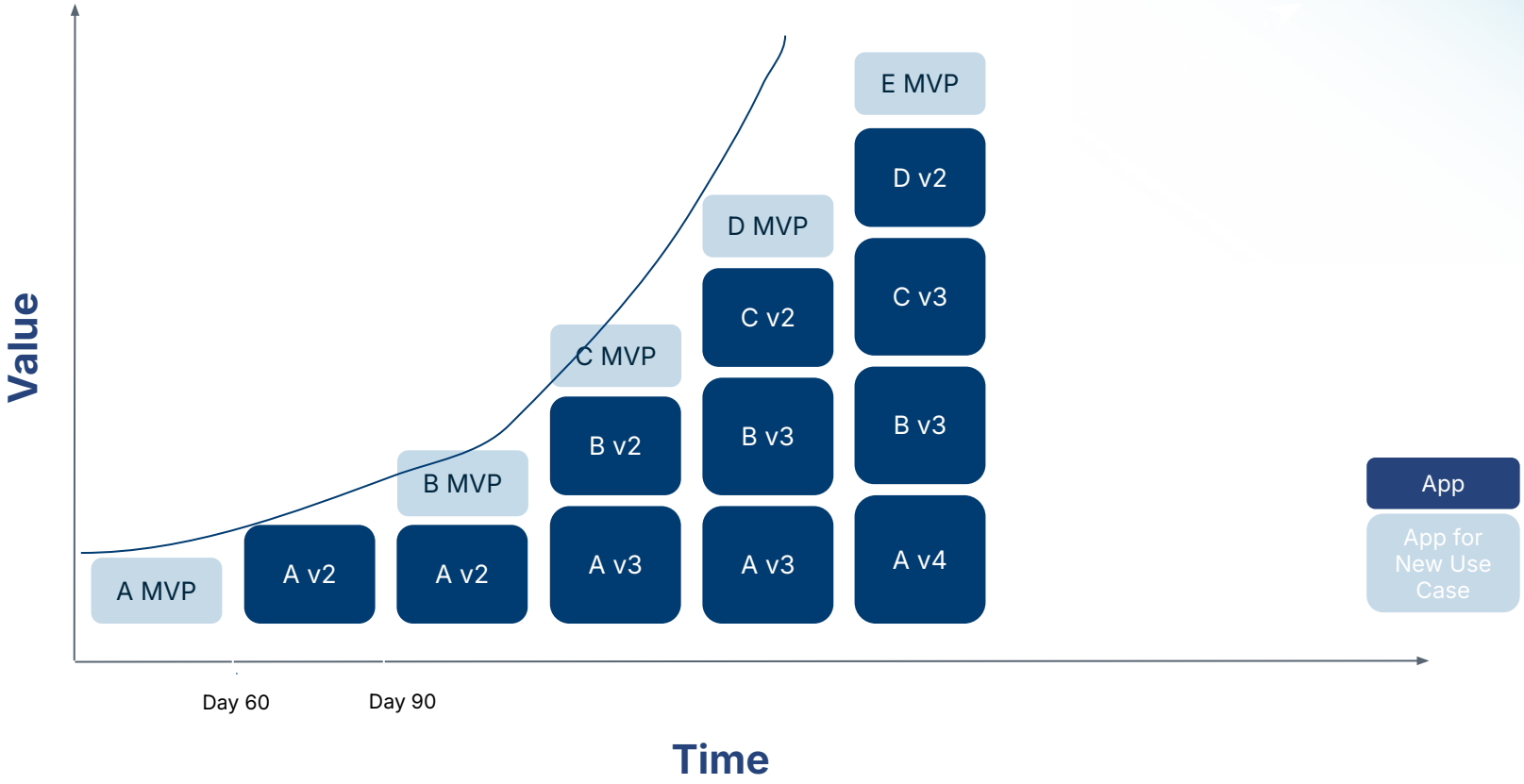
Single Use Case CI: Diminishing returns



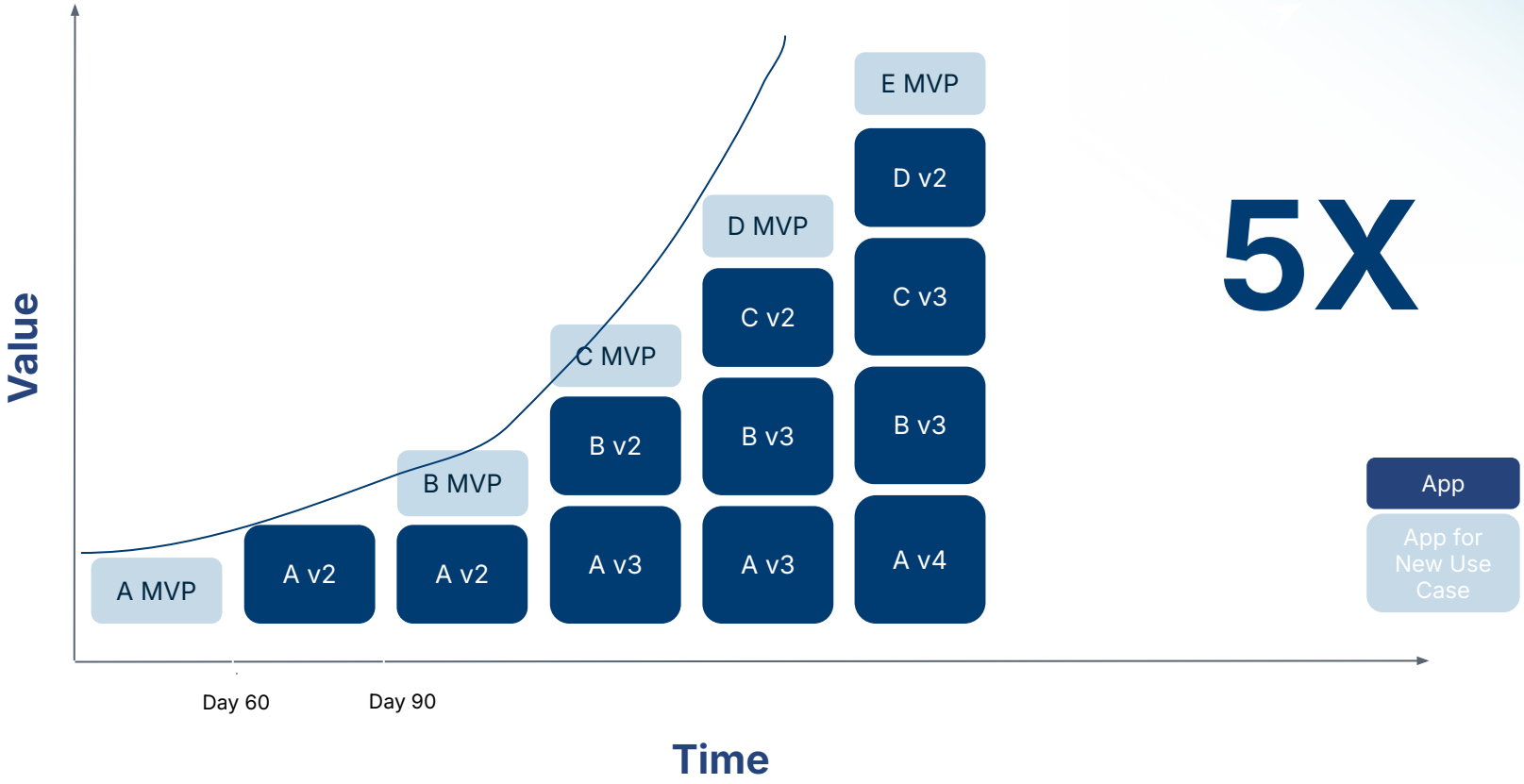
Scaling use cases, no CI: Linear



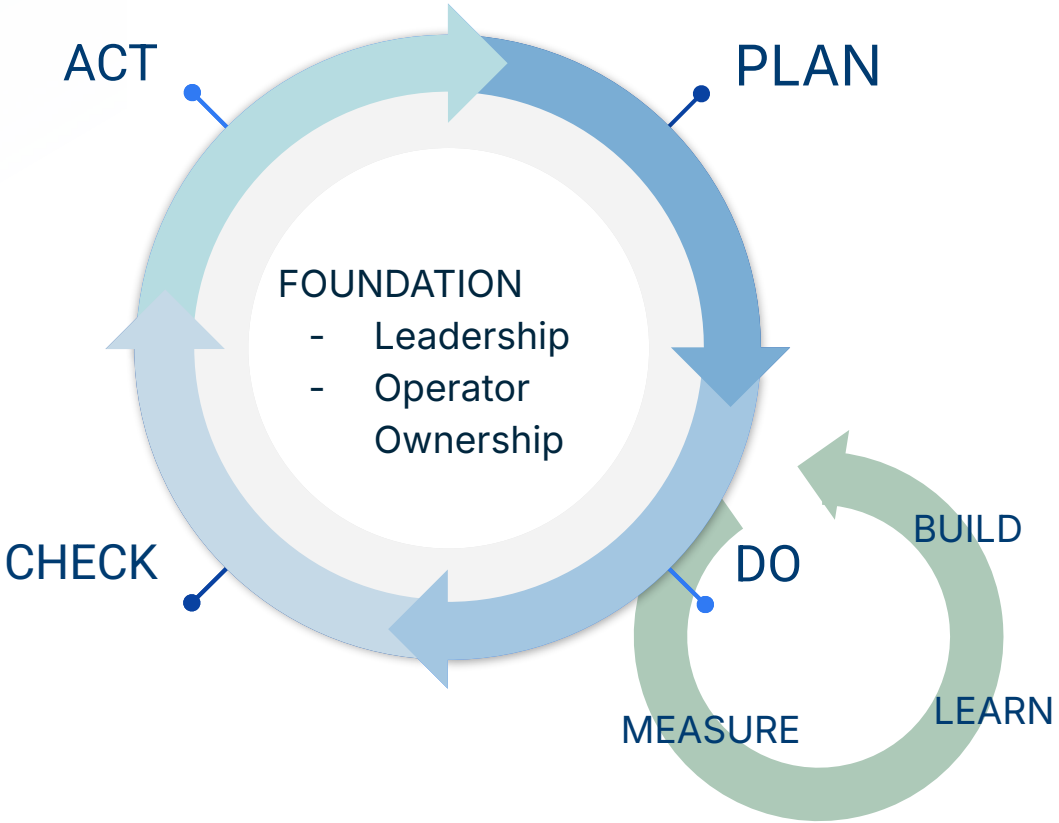
Scaling + CI: Exponential Increase



Scaling + CI: Exponential Increase across multiple sites



The Continuous Transformation Flywheel



Build a Continuous Improvement Capability, Not Just Apps

- Establishing a Center of Excellence (CoE)
- Fostering Citizen Development
- Implementing Light Governance
- Creating a Library of Reusable Components

Customer Insight: The Self-Funding Journey

*“Our first Tulip app for machine monitoring saved us **enough in reduced downtime** in the first six months to pay for **our entire year's subscription**. We used that documented win to get **budget approval to expand** Tulip to our quality and logistics teams. It basically funds itself now.”*

Projected ROI is powerful for a **strategic roadmap**

Project	Time & Resources	Estimated Value	Projected ROI	Priority
Project 1	$	$$$	300%	P1
Project 2	$$	$$$$	200%	P2
Project 3	$$$	$$$	100%	P4?
Project x				

EXERCISE 3: What’s the biggest roadblock in front of you for scaling?

Key Takeaways

1. **Align:** Understand the unique needs of your organization holistically.
2. **Launch:** Start small, a fast right-sized deployment is going to get you to value faster.
3. **Prove:** Leverage your data!
4. **Scale:** Never let your continuous improvement loops stop.

OPERATIONS CALLING powered by aws | TULIP

QUESTIONS?

THANK YOU